**UNITED STATES DISTRICT COURT**
**WESTERN DISTRICT OF TEXAS**
**WACO DIVISION**

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| **Xtera, Inc.,**<br>**Xtera Topco Ltd., and**<br>**Neptune Subsea IP Ltd.,**<br><br>**Plaintiffs,**<br><br>**v.**<br><br>**NEC Corporation, and**<br>**NEC Networks & System Integration Corporation**<br><br>**Defendants.** | §<br>§<br>§<br>§<br>§<br>§<br>§<br>§<br>§<br>§<br>§<br>§<br>§<br>§ | **CASE NO. 6:19-cv-00279**<br><br>**JURY TRIAL DEMANDED** |

## COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs Xtera, Inc. ("Xtera U.S."), Xtera Topco Ltd., and Neptune Subsea IP Ltd. (collectively, "Xtera") demand a trial by jury on all issues so triable and, for their complaint against Defendants NEC Corporation ("NEC Corp.") and NEC Networks & System Integration Corp. ("NESIC") (collectively, "NEC" or "Defendants") allege as follows:

## THE PARTIES

1. Plaintiff Xtera, Inc. ("Xtera U.S.") is a wholly-owned subsidiary of Xtera Holdings Ltd., which in turn is a wholly owned subsidiary of plaintiff Xtera Topco Ltd. Xtera U.S. is the successor to Xtera Communications, Inc., which was founded in 1998.

2. Plaintiff Xtera Topco Ltd. is a UK corporation with its headquarters at Bates House, Church Road, Harold Wood, Essex, RM3 0SD, England. Plaintiff Neptune Subsea IP Ltd. is a wholly owned subsidiary of Xtera Holding Ltd., which in turn is a wholly owned subsidiary of Plaintiff Xtera Topco Ltd., and is also a UK corporation with its headquarters at

Bates House, Church Road, Harold Wood, Essex, RM3 0SD, England. Plaintiff Neptune Subsea IP Ltd. is a holding company for intellectual property owned by Plaintiff Xtera Topco Ltd. and its subsidiaries. All plaintiffs may be collectively referred to as "Xtera."

3. On information and belief, Defendant NEC Corp. is a Japanese corporation with its headquarters in 7-1, Shiba 5-chome, Minato-ku, Tokyo 108-8001, Japan.

4. On information and belief, Defendant NESIC is a Japanese corporation with its headquarters and principal place of business at Iidabashi First Tower, 2-6-1 Koraku, Bunkyo-ku, Tokyo 112-8560. On information and belief, NESIC has no majority investors, but Defendant NEC Corp. presently owns approximately 38% and NEC Corporation Retirement Trust presently owns approximately 13%. All defendants may be collectively referred to as "NEC."

## JURISDICTION AND VENUE

5. This lawsuit is an action for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code.

6. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

7. This Court has personal jurisdiction over Defendants in that they have, directly or through agents and/or intermediaries, committed acts within the State of Texas giving rise to this action and/or have established minimum contacts with the State of Texas such that the exercise of jurisdiction would not offend traditional notions of fair play and justice.

**NEC Corp.**

8. This Court has personal jurisdiction over NEC Corp. because, *inter alia*, and on information and belief, NEC Corp. has established the minimum contacts with the State of Texas for the Court to exercise personal jurisdiction over it.

9. NEC Corp. is also subject to personal jurisdiction in this Court under the Texas Long-Arm Statute, Tex. Civ. Prac. & Rem. Code § 17.042, and under the U.S. Constitution, because, on information and belief, NEC Corp. regularly conducts business in the State of Texas, and purposefully avails itself of the privileges of conducting business in the State of Texas, including through its wholly-owned subsidiaries, such as NEC Corporation of America headquartered in the State of Texas . In particular, on information and belief, NEC Corp., directly and/or through its agents, intermediaries, and/or subsidiaries, including NEC Corporation of America, makes, uses, imports, offers for sale, sells, and/or advertises its products and affiliated services in the State of Texas. On information and belief, through its agents, intermediaries, and/or subsidiaries, NEC Corp. placed, and continues to place, infringing products into the stream of commerce via established distribution channels, with the knowledge and/or understanding that such products are sold in the State of Texas.

10. On information and belief, and based on NEC Corp.'s activities, directly and/or through its agents, intermediaries, and/or subsidiaries, occurring within the State of Texas, NEC should reasonably expect its actions to have consequences in the State of Texas and this District. In addition, on information and belief, NEC Corp. has, and continues to transact business with persons in the State of Texas, directly and/or through third parties, and/or its intermediaries, by importing, offering to sell, and/or selling Accused Products and services that infringe Xtera's Asserted Patents. These acts by NEC Corp. have and continue to cause

foreseeable harm and injury to Xtera, including Xtera U.S., a Delaware Corporation with its principal place of business in Allen, Texas.

11. NEC Corp. is also subject to jurisdiction in the United States, and specifically in the State of Texas, pursuant to Rule 4(k)(2) of the Federal Rules of Civil Procedure. NEC Corp. has contacts with the United States that include, *inter alia*, advertising, importing, offering to sell, and/or selling its products throughout the United States, including the State of Texas.

12. Venue is proper as to NEC Corp. in this judicial district pursuant to 28 U.S.C. § 1391(c)(3).

**NESIC**

13. This Court has personal jurisdiction over NESIC because, *inter alia*, and on information and belief, NESIC has established the minimum contacts with the State of Texas for the Court to exercise personal jurisdiction over it.

14. NESIC is also subject to personal jurisdiction in this Court under the Texas Long-Arm Statute, Tex. Civ. Prac. & Rem. Code § 17.042, and under the U.S. Constitution, because, on information and belief, NESIC regularly conducts business in the State of Texas, and purposefully avails itself of the privileges of conducting business in the State of Texas an, including through its affiliated companies, such as NEC Corporation of America headquartered in the State of Texas. In particular, on information and belief, NESIC, directly and/or through its agents, intermediaries, affiliates and/or subsidiaries, including NEC Corporation of America, makes, uses, imports, offers for sale, sells, and/or advertises its products and affiliated services in the State of Texas. Through its agents, intermediaries, and/or subsidiaries, NESIC placed, and continues to place, infringing products into the stream of commerce via established

distribution channels, with the knowledge and/or understanding that such products are sold in the State of Texas.

15. On information and belief, and based on NESIC's activities, directly and/or through its agents, intermediaries, and/or subsidiaries, occurring within the State of Texas, NESIC should reasonably expect its actions to have consequences in the State of Texas. In addition, on information and belief, NESIC has, and continues to transact business with persons in the State of Texas, directly and/or through third parties, and/or its intermediaries, by importing, offering to sell, and/or selling Accused Products and services that infringe Xtera's Asserted Patents. These acts by NESIC have and continue to cause foreseeable harm and injury to Xtera, including Xtera U.S., a Delaware Corporation with its principal place of business in Allen, Texas.

16. NESIC is also subject to jurisdiction in the United States, and specifically in the State of Texas, pursuant to Rule 4(k)(2) of the Federal Rules of Civil Procedure. NESIC has contacts with the United States that include, inter alia, advertising, importing, offering to sell, and/or selling its products throughout the United States, including the State of Texas.

17. Venue is proper as to NESIC Corp. in this judicial district pursuant to 28 U.S.C. § 1391(c)(3).

## THE PATENTS-IN-SUIT

18. On July 15, 2003, the U.S. Patent and Trademark Office duly and lawfully issued U.S. Patent No. 6,594,071 ("the '071 patent"), entitled "Method and Apparatus for Amplifier Control" naming Pavle Gavrilovic, Peter J. Goudreau, James E. Newby, IV, and Ricardo E. Saad as the inventors. Neptune Subsea IP Ltd. is the owner by assignment of all rights, title and interest in the '071 patent and has the exclusive right to bring suit to enforce the patent.

Evidence of such assignment has been recorded with the U.S. Patent and Trademark Office at Reel/Frame 042586/0916. A true and correct copy of the '071 patent is attached hereto as Exhibit 1.

19. According to the '071 patent, two common approaches to controlling amplifier gain are the use of logarithmic amplifiers and the use of electronic range switching. These approaches, however, can suffer from low linearity and accuracy over all or a part of the amplified bandwidth. In addition, these approaches often require a significant trade-off between bandwidth and accuracy in that, as the amplified bandwidth increases, the errors associated with controlling gain using these approaches also increases.

20. The '071 patent generally relates to a system and method for controlling optical amplifier gain using a control system with a plurality of control legs. Each leg receives a different percentage of the optical signal, and the value of at least one of the received portions of the optical signal is scaled and then used to control the gain of the amplifier. The system and method described by the '071 patent allows for optical amplifier gain to be controlled without the disadvantages of conventional gain control methods.

21. On February 19, 2013, the U.S. Patent and Trademark Office duly and lawfully issued U.S. Patent No. 8,380,069 ("the '069 patent"), entitled "Introduction-Side Dispersion Shifting of Channels" naming Wayne S. Pelouch, and Do-Il Chang as the inventors. Neptune Subsea IP Ltd. is the owner by assignment of all rights, title and interest in the '069 patent and has the exclusive right to bring suit to enforce the patent. Evidence of such assignment has been recorded with the U.S. Patent and Trademark Office at Reel/Frame 042586/0916. A true and correct copy of the '069 patent is attached hereto as Exhibit 2.

22. According to the ’069 patent, non-coherent signals (using non-coherent modulation) traveling through fiber optic network can affect the coherent detection of coherent signals (using coherent modulation) depending on the difference in dispersion maps between the two types of signals. Mixed non-coherent and coherent signals are found in older systems that have been upgraded with new channel capacity, where new coherently-modulated channels are added to existing traffic over non-coherent channels using non-coherent modulation. This involves adding new equipment to generate coherent signals, and multiplexing those signals together with non-coherent channels for outgoing transmission on the line. Due to differences and/or interference between non-coherent and coherent transmissions, it can be necessary to apply different dispersion compensation to each set of channels in order to optimize signal quality.

23. The ’069 patent generally relates to systems and methods of including different dispersive elements or dispersion-compensating elements for the non-coherent channels than the coherent channels, so as to compensate for this degradation and optimize transmission of mixed signals over the network.

24. Collectively, the ’071 patent, the ’069 patent are referred to herein as the “Asserted Patents.”

## BACKGROUND

25. The technologies at issue generally relate to telecommunication systems, subsystems and components thereof, that are used to carry digital data, such as telephone, Internet and private data traffic over a significant distance between a terminal where the signal is generated to a terminal where the signal is received.

26. These telecommunication systems are designed to address the challenge of transmitting data signals across various different environments. To address these challenges, these telecommunication systems rely on specialized equipment and components such as: (i) optical amplifiers or repeaters, which boost the intensity of light signals traveling through the fiber optic cable at certain intervals so that the signals do not become too attenuated, or faint, before they reach their destination (ii) terminal equipment, which transmits and receives optical signals that are transmitted across the fiber optic cable using high-powered lasers, provides optical signal control, monitoring, and other functionality, and connects to other data networks, (iii) multiplexers, demultiplexers, wave-selective switches (WSS) and reconfigurable optical add/drop modules (ROADM) that combine and separate wavelengths to control which channel will be transmitted along which path, (iv) dispersion compensation modules for compensating the chromatic dispersion of a span of transmission fiber, and (v) various types of fiber optic cable, which can transmit light waves containing data across different distances at required speeds and withstand various harsh environments.

27. Xtera is a global telecommunications company that develops, manufactures, installs, configures, sells, and supports terrestrial and submarine telecommunications systems, including its optical networking solutions, to telecommunications service providers, content service providers, enterprises, and government entities worldwide.

28. Xtera pioneered the use of all-Raman amplification to improve the capacity and reach of long span terrestrial and submarine optical networks.

29. Xtera deployed its first commercial all-Raman fiber optic terrestrial network in Europe, in 2004. At the time, the network was the highest capacity and longest distance all-optical network in Europe. Xtera then expanded its offerings from terrestrial to submarine

networks in 2007 when it introduced its Nu-Wave NXT platform, which provided a dedicated platform for even long-haul subsea telecommunication systems.

30. Xtera introduced its current product offering designed to improve the performance of its fiber optic telecommunication systems, the Nu-Wave Optima, in October 2010, with its first deployment in early 2011. *See* https://www.xtera.com/products-services/ (last accessed November 8, 2018).

31. The Nu-Wave Optima can be configured to include an EDFA Optical Amplifier (EOA), or a Span Extension (SE) module and EOA. Some networks have also deployed an EOA variant at the terminal, the Dual Controlled Amplifier (DCA) module.

32. Through development of advanced optical amplifiers, repeaters, remote monitoring and control equipment, and other optical networking components, and full turnkey systems, and subsystem upgrades, Xtera has become an industry leader in telecommunication applications and offers industry leading solutions that optimize the performance and reduce the cost of deploying, upgrading, and managing subsea and terrestrial telecommunication systems – a position it continues to hold today, driving advances in fiber optics networking through aggressive research and development and cutting-edge products.

33. NEC offers and provides submarine and terrestrial telecommunication systems, subsystems, system upgrades and various components thereof.

34. NEC, either itself and/or through the activities of its subsidiaries, develops, manufactures, installs, configures, imports, sells, and/or uses in the United States, NEC's terrestrial and submarine telecommunication systems and components, including NS Series telecommunications systems and other NEC telecommunication systems, subsystems, and components including, but not limited to, any system utilizing Variable Gain Erbium Doped

Fiber ("EDFA") amplifier modules and the NS Series Submarine Repeatered System (collectively, the "Accused Products"). The Accused Products incorporate—without license from Xtera—many technologies developed and patented by Xtera.

**COUNT ONE – INFRINGEMENT OF THE '071 PATENT**

35. Xtera incorporates by reference its allegations in Paragraphs 1–35**Error! Reference source not found.Error! Reference source not found.** as if fully restated in this paragraph.

36. On information and belief, Defendants have been and are now directly and/or indirectly infringing, literally and/or under the doctrine of equivalents, at least independent claims 1 and 14 and one or more dependent claims of the '071 patent ("Asserted Claims") by making, using, selling, offering for sale and/or importing in the United States the Accused Products.

37. The '071 patent is generally directed to a system and method for controlling optical amplifier gain using a control system with a plurality of control legs. Among the Asserted Claims of the '071 patent, Claim 1 recites as follows:

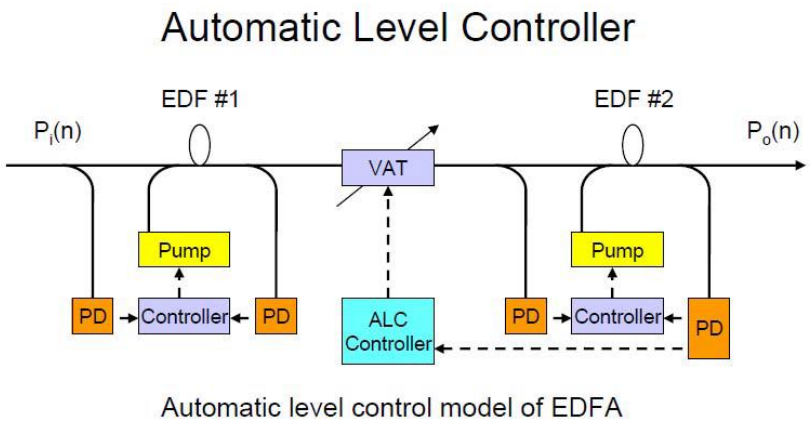
> A control system for use in an optical amplifier, the control system comprising:
>
> a plurality of control legs, each operable to receive one of plurality of portions of an optical signal, wherein each of the plurality of portions comprises a different percentage of the optical signal;
>
> a plurality of registers, each associated with one of the control legs and each operable to store a value proportional to the portion of the optical signal communicated in the associated control leg; and

a controller operable to select one of the values stored in one of the plurality of registers and to scale that value by a scaling factor to generate a scaled value, wherein the scaling factor is determined at least in part by the percentage of the optical signal associated with that value;

wherein the controller is operable to generate, based at least in part on the scaled value, a control signal operable to affect the gain of the amplifier.

39. On information and belief, NEC's Accused Products meet the limitations of claim 1 of the '071 patent. For example, and without limitation NEC provides Erbium-doped fiber amplifier (EDFA) products, which are optical amplifiers used in at least NEC's NS Series products, R640SW repeaters, and Line Terminal Equipment SLR320SW.

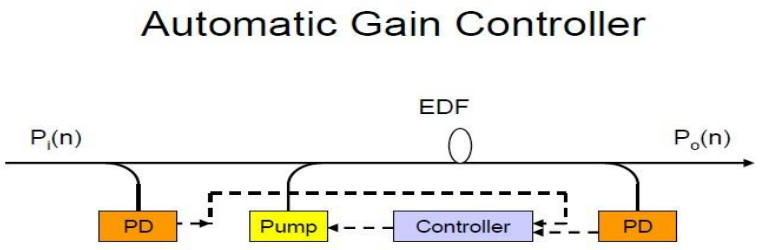
40. On information and belief, NEC provides a control system for use in at least these EDFA products. These control systems comprise: a plurality of control legs receiving different percentages of the optical signal, storage registers associated with the optical signal communicated to each control leg and a controller which selects one of the stored values, scales the values and generates a control signal operable to affect the gain of the amplifier, as shown below.




Automatic level control model of EDFA

- ALC is usually realized a variable optical attenuator (VAT) in the middle of a two- or three- stage EDFA.
  - Each stage has an independent AGC controller.
- ALC controller adjusts the attenuation of VAT to maintain constant output power.
  - Total or individual channel output power can be controlled, according to the monitoring unit in the feedback control loop.
  - Tone channel or control channel, which transmits with data channels, is usually used for ALC function.

*See* Ex. 3 (Zong et al., *Transient Control in Dynamically Reconfigured Networks with Cascaded Erbium Doped Fiber Amplifiers*, WOCC 2007 at 8).




AGC model of EDFA

- Assume the target gain of the amplifier is G, and the controller tries to maintain the target gain by adjusting the pump power of the EDFA.
- At time n, the monitored input and output power is $P_i(n)$ and $P_o(n)$, respectively.
  - The real gain at time n can be obtained as $G(n) = P_o(n) / P_i(n)$.
  - The gain error is $\Delta = G(n) - G$.
- With proportional controller, the pump power of the EDFA should be adjusted to $P_p(n) = P_p(n-1) + a * \Delta$, where $P_p(n-1)$ is the previous pump power, a is the feedback coefficient.
- Integral and deviation controllers can also be combined with proportional controller to improve the control speed and accuracy.
- Both electronic and optical AGC solutions are available.

*Id.* at 7.

41. NEC has had actual knowledge and notice of the ’071 patent at least since the filing of this Complaint.

42. On information and belief, NEC also has been and is now actively inducing infringement of one or more of the Asserted Claims of the ’071 patent, either literally or under the doctrine of equivalents.

43. On information and belief, NEC makes, uses, sells or offers for sale in the United States the Accused Products, and possesses an affirmative intent to actively induce infringement by others, including purchasers and end users who deploy and make use of the Accused Products.

44. On information and belief, NEC has intended, and continues to intend to induce infringement of the Asserted Claims of the ’071 patent by others and has knowledge, with specific intent, that the inducing acts would cause infringement or has been willfully blind to the possibility that its inducing acts would cause the infringing acts. For example, NEC knowingly and actively induces infringement of the Asserted Claims of the ’071 patent by encouraging, instructing, and aiding end users to use one or more of the Accused Products and/or by selling the Accused Products to others. NEC induces such infringement by, at a minimum, providing manuals, white papers, training, and/or other technical support with specific intent to induce purchasers and end users of the Accused Products to perform acts intended by NEC to cause direct infringement of the Asserted Claims of the ’071 patent in the United States.

45. On information and belief, NEC also has been and is now contributing to the infringement of the Asserted Claims of the ’071 patent, either literally or under the doctrine of equivalents.

46. On information and belief, NEC has actively, knowingly, and intentionally contributed and continues to actively, knowingly, and intentionally contribute to the infringement of the Asserted Claims of the '071 patent by having sold or offered to sell and continuing to sell or offer for sale the Accused Products within the United States, with knowledge that the infringing technology in the Accused Products is especially made and/or especially adapted for use in infringement of the Asserted Claims of the '071 patent. On information and belief, NEC has contributed to the infringement by others with knowledge that the infringing technology in the Accused Products is a material part of the patented invention, and with knowledge that the infringing technology in the Accused Products is not a staple article of commerce suitable for substantial non-infringing use, and with knowledge that others including, but not limited to, resellers, distributors, customers, and/or other end users of the Accused Products, infringe and will continue to infringe the Asserted Claims '071 patent because, due to their specific designs, the Accused Products and components thereof do not have any substantial non-infringing uses. On information and belief, NEC has such knowledge at least because the claimed features of the '071 patent are used by others including, but not limited to, resellers, distributors, customers, and/or other end users of the Accused Products.

47. On information and belief, NEC knew or should have known of the '071 patent and has acted, and continues to act, in an egregious and wanton manner by infringing the Asserted Claims '071 patent. On information and belief, NEC's infringement of the '071 patent has been and continues to be willful and deliberate. The market for telecommunication systems including optical amplifiers is small and contains a limited number of competitors, with Xtera being a known pioneer with whom NEC has great familiarity. On information and belief, NEC

used the technology in the Asserted Claims of the ’071 patent to develop, make and sell its Accused Products without permission from Xtera.

48. On information and belief, despite knowing that its actions constituted infringement of the Asserted Claims of the ’071 patent and/or despite knowing that there was a high likelihood that its actions constituted infringement of the patent, NEC nevertheless continued its infringing actions, and continues to make, use and sell its Accused Products.

49. NEC’s acts of infringement have injured and damaged Xtera. NEC’s wrongful conduct has caused Xtera to suffer irreparable harm resulting from the loss of its lawful patent rights to exclude others from making, using, selling, offering to sell and importing the patented inventions. Upon information and belief, NEC will continue these infringing acts unless enjoined by this Court.

**COUNT TWO – INFRINGEMENT OF THE ’069 PATENT**

50. Xtera incorporates by reference its allegations in Paragraphs 1–49 as if fully restated in this paragraph.

51. On information and belief, NEC has been and is now directly and/or indirectly infringing, literally and/or under the doctrine of equivalents, at least independent claims 1, 11 and 13 and one or more dependent claims of the ’069 patent (“Asserted Claims”) by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, the Accused Products.

52. The ’069 patent is generally directed to systems and methods of introducing different dispersions to coherent and non-coherent optical channels before mixing the coherent and the non-coherent optical channels for transmission through a partially dispersion

compensated optical link, so as to avoid signal degradation caused by optical dispersion and optimize transmission of mixed signals over the network.

53. Among the Asserted Claims of the ’069 patent, Claim 1 recites as follows:

An optical system comprising:

a non-coherent source that provides a set of one or more non-coherent optical wavelength channels;

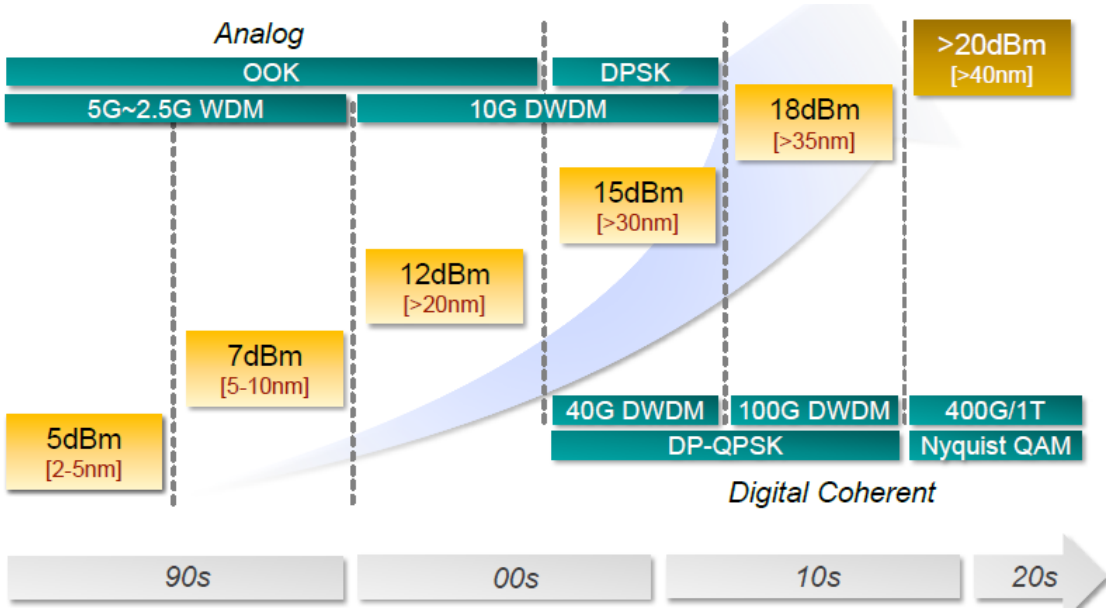
a coherent source that provides a set of one or more coherent optical wavelength channels;

an introduction node that receives the non-coherent optical wavelength channel set from the non-coherent source, and receives the coherent optical wavelength channel set from the coherent source, and combines the coherent and non-coherent optical wavelength sets to form a mixed optical wavelength channel set that is provided onto an at least partially dispersion compensated optical fiber link, the introduction node comprising;

a dispersive element that introduces different dispersion levels into either or both of the coherent optical wavelength channel set and the non-coherent optical wavelength channel set such that the coherent optical wavelength channel set has a shifted dispersion map as compared to the non-coherent optical wavelength channel set.

54. On information and belief, NEC’s Accused Products meet the limitations of at least claim 1 of the ’069 patent. For example, and without limitation NEC provides NS Series submarine repeatered systems and upgrades of subsea networks ,which include components, such as, but not limited to,100G DWDM and 10G DWDM transponders, which provide coherent and non-coherent optical wavelength channels and an introduction node that

introduces those channels to a dispersive element that introduces different dispersion levels into either or both of the coherent and non-coherent to shift the dispersion map of the coherent and non-coherent wavelengths as compared to one another, as shown below.




*See* Ex. 4 (Inada, *Recent advances and trends for digital coherent 100Gb/s and beyond technologies in submarine optical cable*, OFC Market Watch 2014 at 14, (available at https://www.ofcconference.org/library/images/ofc/2014/Market%20Watch%20and%20SPS/2-Aoki.pdf.)).

55. Nokia has had knowledge and notice of the '069 patent at least since May 11, 2018, when NEC filed its Opening *Markman* Brief in Investigation No. 337-TA-1098 in the United States International Trade Commission.

56. On information and belief, NEC also has been and is now actively inducing infringement of one or more of the Asserted Claims of the '069 patent, either literally or under the doctrine of equivalents.

57. On information and belief, NEC makes, uses, sells or offers for sale in the United States the Accused Products, and possesses an affirmative intent to actively induce infringement

by others, including purchasers and end users who deploy and make use of the Accused Products.

58. On information and belief, NEC has intended, and continues to intend to induce infringement of the Asserted Claims of the ’069 patent by others and has knowledge, with specific intent, that the inducing acts would cause infringement or has been willfully blind to the possibility that its inducing acts would cause the infringing acts. For example, NEC knowingly and actively induces infringement of the Asserted Claims of the ’069 patent by encouraging, instructing, and aiding end users to use one or more of the Accused Products and/or by selling the Accused Products to others. NEC induces such infringement by, at a minimum, providing manuals, white papers, training, and/or other technical support with specific intent to induce purchasers and end users of the Accused Products to perform acts intended by NEC to cause direct infringement of the Asserted Claims of the ’069 patent in the United States.

59. On information and belief, NEC also has been and is now contributing to the infringement of the Asserted Claims of the ’069 patent, either literally or under the doctrine of equivalents.

60. On information and belief, NEC has actively, knowingly, and intentionally contributed and continues to actively, knowingly, and intentionally contribute to the infringement of the Asserted Claims of the ’069 patent by having sold or offered to sell and continuing to sell or offer for sale the Accused Products within the United States, with knowledge that the infringing technology in the Accused Products is especially made and/or especially adapted for use in infringement of the Asserted Claims of the ’069 patent. On information and belief, NEC has contributed to the infringement by others with knowledge that the infringing technology in the Accused Products is a material part of the patented invention,

and with knowledge that the infringing technology in the Accused Products is not a staple article of commerce suitable for substantial non-infringing use, and with knowledge that others including, but not limited to, resellers, distributors, customers, and/or other end users of the Accused Products, infringe and will continue to infringe the Asserted Claims ’069 patent because, due to their specific designs, the Accused Products and components thereof do not have any substantial non-infringing uses. On information and belief, NEC has such knowledge at least because the claimed features of the ’069 patent are used by others including, but not limited to, resellers, distributors, customers, and/or other end users of the Accused Products.

61. On information and belief, NEC knew or should have known of the ’069 patent and has acted, and continues to act, in an egregious and wanton manner by infringing the Asserted Claims of the ’069 patent. On information and belief, NEC’s infringement of the ’069 patent has been and continues to be willful and deliberate. The market for transponders providing shifted dispersion compensation is small and contains a limited number of competitors, with Xtera being a known pioneer with whom NEC has great familiarity. On information and belief, NEC used the technology in the Asserted Claims of the ’069 patent to develop, make and sell its Accused Products without permission from Xtera.

62. On information and belief, despite knowing that its actions constituted infringement of the Asserted Claims of the ’069 patent and/or despite knowing that there was a high likelihood that its actions constituted infringement of the patent, NEC nevertheless continued its infringing actions, and continues to make, use and sell its Accused Products.

63. NEC’s acts of infringement have injured and damaged Xtera. NEC’s wrongful conduct has caused Xtera to suffer irreparable harm resulting from the loss of its lawful patent rights to exclude others from making, using, selling, offering to sell and importing the patented

inventions. Upon information and belief, NEC will continue these infringing acts unless enjoined by this Court.

## PRAYER FOR RELIEF

**WHEREFORE**, Xtera respectfully requests the following relief:

1. A judgment that NEC has directly and/or indirectly infringed, either literally or under the doctrine of equivalents, and continues to infringe the Asserted Claims of the ’071, and ’069.
2. A judgment that the that the Asserted Patents are valid and enforceable;
3. A judgment permanently enjoining NEC, their parents, subsidiaries, affiliates, agents, servants, employees, attorneys, representatives, successors and assigns, and all others in active concert or participation with them from infringing the Asserted Patents;
4. A judgment awarding Xtera damages adequate to compensate for past, present, and future infringement, said damages being no less than a reasonable royalty and/or lost profits, and any pre- and post-judgment interest as allowed by law, costs, and other damages permitted by 35 U.S.C. § 284;
5. A judgment finding that NEC’s infringement of the ’071, and ’069 was deliberate and willful.
6. A judgment awarding Xtera enhanced damages up to three times their amount pursuant to 35 U.S.C. § 284, together with interest and costs;
7. An accounting to determine the damages to be awarded to Xtera as a result of Defendants’ infringement, including an accounting for infringing sales not

presented at trial and an award of additional damages for any such infringing sales;

8. A judgment declaring that this case is exceptional, and awarding Xtera its reasonable expenses, costs, and attorneys' fees in accordance with 35 U.S.C. § 285 and Rule 54(d) of the Federal Rules of Civil Procedure;

9. An award to Xtera of costs and expenses that it incurs in prosecuting this action; and

10. A judgment awarding Xtera such further, necessary and proper relief as this Court may deem just and reasonable.

**DEMAND FOR A JURY TRIAL**

Xtera hereby respectfully requests a trial by jury of all issues so triable, pursuant to Rule 38 of the Federal Rules of Civil Procedure.

Dated: April 26, 2019

Respectfully submitted,
By: */s/ John A. Powell*

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